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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,046	02/28/2005	Kiyoshi Nishimura	266833US3PCT	2977
22850 7590 02/28/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER WON, BUMSUK	
			ART UNIT	PAPER NUMBER
			2879	
SHORTENED STATUTORY PERIOD OF RESPONSE		NOTIFICATION DATE	DELIVERY MODE	
3 MONTHS		02/28/2007	ELECTRONIC	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/28/2007.

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## Office Action Summary

Application No.

10/526,046

Applicant(s)

NISHIMURA ET AL.

Examiner

Bumsuk Won

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-15, 17 and 18 is/are allowed.
- 6) ☒ Claim(s) 1-12 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>02/05, 08/05</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested:  
Fluorescent lamp having bent portions and its manufacturing method, and illuminating apparatus having the lamp.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The independent claims 1 and 10 claims a device of fluorescent lamp, however, in the claims, the Applicant is claiming process steps such as forming end portions with electrodes and forming phosphor layer. It is confusing whether the claims are product claim or process claim. For examining purpose, the claim limitations will be assumed as product claim limitation. Claims 2-9, 11, 12, and 16 are rejected due to claim dependency.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by Chapman (4,549,251).**

**Regarding claim 10**, Chapman discloses a fluorescent lamp (figures 1-4) comprising: a bulb having plurality of straight tube portions (not referenced) having an external tube diameter of 12 to 20 mm (column 4, lines 58-55) within a same plane through bent portions; a pair of end portions (4) being formed in close proximity and sealed therein so as to form a single discharge path through the straight tube portions and bent portions (figures 1-4); a phosphor layer (column 2, lines 39-48) on an inner surface of the bulb; and a discharge medium including mercury being formed inside the bulb (column 3, lines 53-60); and a base (5) provided on the end portions of the bulb.

The examiner notes that the claim limitation of a coldest portion to be maximally cooled being formed to at least of the bent portions at a time of lighting is drawn to a functional claim limitation which is incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a functional claim limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject functional claim limitation is not afforded patentable weight (MPEP 2114).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman in view of Kohei (JP 58-103760) which is a prior art in the IDS.**

**Regarding claim 11**, Chapman discloses all the claim limitations except for a maximum length of an inner tube diameter at the bent portion is 1.2 times or more an inner tube diameter of the straight tube portion.

Koehi discloses a lamp having bent portions and straight portions wherein the diameter of the inner tube diameter is 1.7 times the inner tube diameter of the straight tube portion (abstract), for the purpose of reducing the intensity reduction of the outer curved part of a bulb (abstract, purpose).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a lamp having bent portions and straight portions wherein the diameter of the inner tube diameter is 1.7 times the inner tube diameter of the straight tube portion disclosed by Kohei in the lamp disclosed by Chapman, for the purpose of reducing the intensity reduction of the outer curved part of a bulb.

**Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman in view of Biro (5,769,530).**

**Regarding claim 12**, Chapman discloses all the claim limitation except for at the bent portions, one tip end of adjacent straight tube portions extends in an axial direction of the straight tube portion so as to project beyond a connecting portion.

Biro discloses a lamp (figure 2) having bent portions and straight portions wherein at the bent portions, one tip end (50) of adjacent straight tube portions extends in an axial direction of

the straight tube portion so as to project beyond a connecting portion (figure 2), for the purpose of enhancing lamp cooling.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have at the bent portions, one tip end of adjacent straight tube portions extends in an axial direction of the straight tube portion so as to project beyond a connecting portion disclosed by Biro in the lamp disclosed by Chapman, for the purpose of enhancing lamp cooling.

**Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman in view of Zinkler (6,515,437).**

**Regarding claim 16**, Chapman discloses all the claim limitations except for the lighting apparatus having a high frequency lighting circuit which lights the lamp by applying 10 KHz or more.

Zinkler discloses a lighting apparatus (figures 1, 2, 4, and 6) having a high frequency lighting circuit (10) which lights the lamp by applying 10 KHz or more (claim 1), for the purpose of effectively controlling the lamp.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the lighting apparatus having a high frequency lighting circuit which lights the lamp by applying 10 KHz or more disclosed by Zinkler in the lamp disclosed by Chapman, for the purpose of effectively controlling the lamp.

***Allowable Subject Matter***

Claims 1-9 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action. The following is a statement of reasons for the indication of allowable subject matter:

**Regarding independent claim 1**, the prior art of record does not teach or suggest the invention of a fluorescent lamp having a glass tube with a external tube diameter of 12-20 mm while the total length of the tube being 800 to 2500 mm, wherein plurality of bent portions and straight portions are formed within a same plane, and both end portions of straight tube portions being adjacent one another so as to form a polygonal shape, along with other claimed limitations. Claims 2-9 are allowed due to claim dependency.

Claims 13-15 and 17-18 are allowed. The following is an examiner's statement of reasons for allowance:

**Regarding independent claim 13**, the prior art of record does not teach or suggest the invention of a fluorescent lamp having a glass tube with a external tube diameter of 12-20 mm while the total length of the tube being 800 to 3000 mm, wherein plurality of bent portions and straight portions are formed within a same plane, and both end portions of straight tube portions being adjacent one another so as to form a polygonal shape, along with other claimed limitations. Claims 14 and 15 are allowed due to claim dependency.

**Regarding independent claim 17**, the prior art of record does not teach or suggest the invention of a method of manufacturing a fluorescent lamp having a glass tube with a external tube diameter of 12-20 mm while the total length of the tube being 800 to 3000 mm, wherein plurality of bent portions and straight portions are formed within a same plane, and both end portions of straight tube portions being adjacent one another so as to form a polygonal shape, along with other claimed limitations. Claim 18 is allowed due to claim dependency.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Contact information***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bumsuk Won whose telephone number is 571-272-2713. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Bumsuk Won  
Patent Examiner



JOSEPH WILLIAMS  
PRIMARY EXAMINER